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ABSTRACT

This report outlines the steps for planning educational facilities for elementary and secondary schools. Three major steps are identified regarding the school building program, and the various phases involved in each step are analyzed in detail. Several charts and information forms for use in planning educational facilities are included. (FS)

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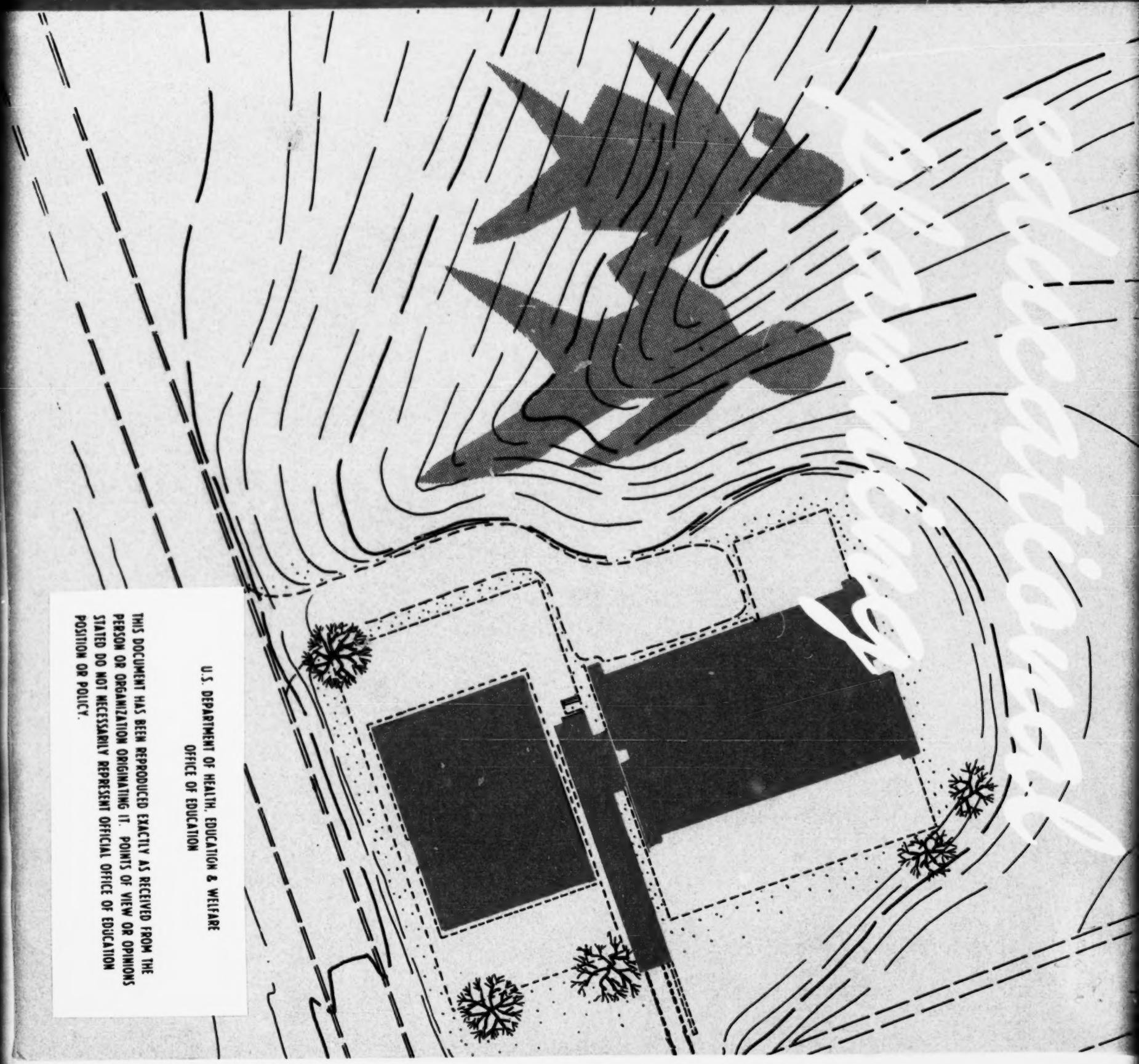
SCHOOL PLANNING GUIDE — SERIES-1

NORTH CAROLINA DEPARTMENT OF PUBLIC INSTRUCTION
DIVISION OF SCHOOL PLANNING, RALEIGH JULY 1964



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educational planning

NORTH CAROLINA DEPARTMENT OF PUBLIC INSTRUCTION
Division of School Planning, Raleigh
Publication No. 377

FOREWORD

In the State of North Carolina, the statutory responsibility for operating the public schools is delegated to local county and city boards of education. A board of education is a policy-making body, employing the services of an executive officer or superintendent who is by law charged with the responsibility and authority of administering the operation and the maintenance of the public school system.

Charged with this responsibility, the successful superintendent keeps abreast of recent developments in public education. He avails himself of every source of professional information and plans continuously for the future requirements of the public schools.

Planning for the future obviously requires continuous appraisal of existing programs and facilities. Although steps are suggested in this publication by which long-range planning can be accomplished, local conditions will necessarily govern actions to be taken. Essential in the total process is that all actions be predictive of school environment in the future.

This publication suggests some of the opportunities supporting the merits of educational planning. The most apparent possibilities in meeting this challenge are through: (1) a more efficient use of teachers' and students' time by carefully planning and articulating the total educational program, (2) an upgrading and broadening of curriculum content through flexible organization, improved teaching practices, additional instructional materials, and more opportunities to challenge the individual capabilities of each student, and (3) more adequately planned school facilities to house the educational program, with recognition of utility, flexibility, efficiency, quality, and aesthetics.

As the process of educational planning is implemented, the Department of Public Instruction will be pleased to provide such consultative services as may be requested by local school officials.

Charles F. Carroll

State Superintendent of Public Instruction

July 1964

PREFACE

This publication has been prepared for use by local school officials in planning for the needs of all children. It is designed to provide boards of education and superintendents with information about the details of future planning, to suggest the sequential steps in the planning process, and to develop an awareness of the need for educational planning.

Educational planning is not something new; it has been going on to a greater or lesser degree as long as there have been organized systems of education. When a school board and its staff make decisions regarding future programs for curriculum, for staffing, for organization, or for facilities, they do this on the basis of some planning. The purpose of this publication is to take a closer look at this process of planning for improved education, to help organize it, and to encourage it.

This publication was prepared under the direction of Dwayne E. Gardner, Educational Consultant, Division of School Planning. Acknowledgement is also made of the assistance of the following individuals who made contributions: Marvin R. A. Johnson, Design Consultant, and Ann Williams Gray, Graphic Artist, Division of School Planning; and the following persons who constituted a committee representing the Division of Superintendents, North Carolina Education Association: Roland R. Morgan, Superintendent of Mooresville City Schools; William H. Wagoner, Superintendent of New Hanover County Schools; and Thomas H. Whitley, Superintendent of Caswell County Schools.

J. L. PIERCE

Director, Division of School Planning

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THE NEED FOR EDUCATIONAL PLANNING

INTRODUCTION

Educational planning is becoming increasingly important. What are some of the reasons why this is so? First, a multitude of changes have come about in this world and in the space around it in recent history, and other changes will come about in the future.

Second, the quality and the extent of education for all our citizens, and of the world, must be vastly improved and increased. This will require optimum uses of our educational resources, which can only be achieved through careful planning under competent leadership.

Third, the scope and direction of occupational education, for the traditional and customary employment opportunities of the skilled, the unskilled, of the nonprofessional and of the professional, as well as for occupations not yet heard of, will demand new approaches in education.

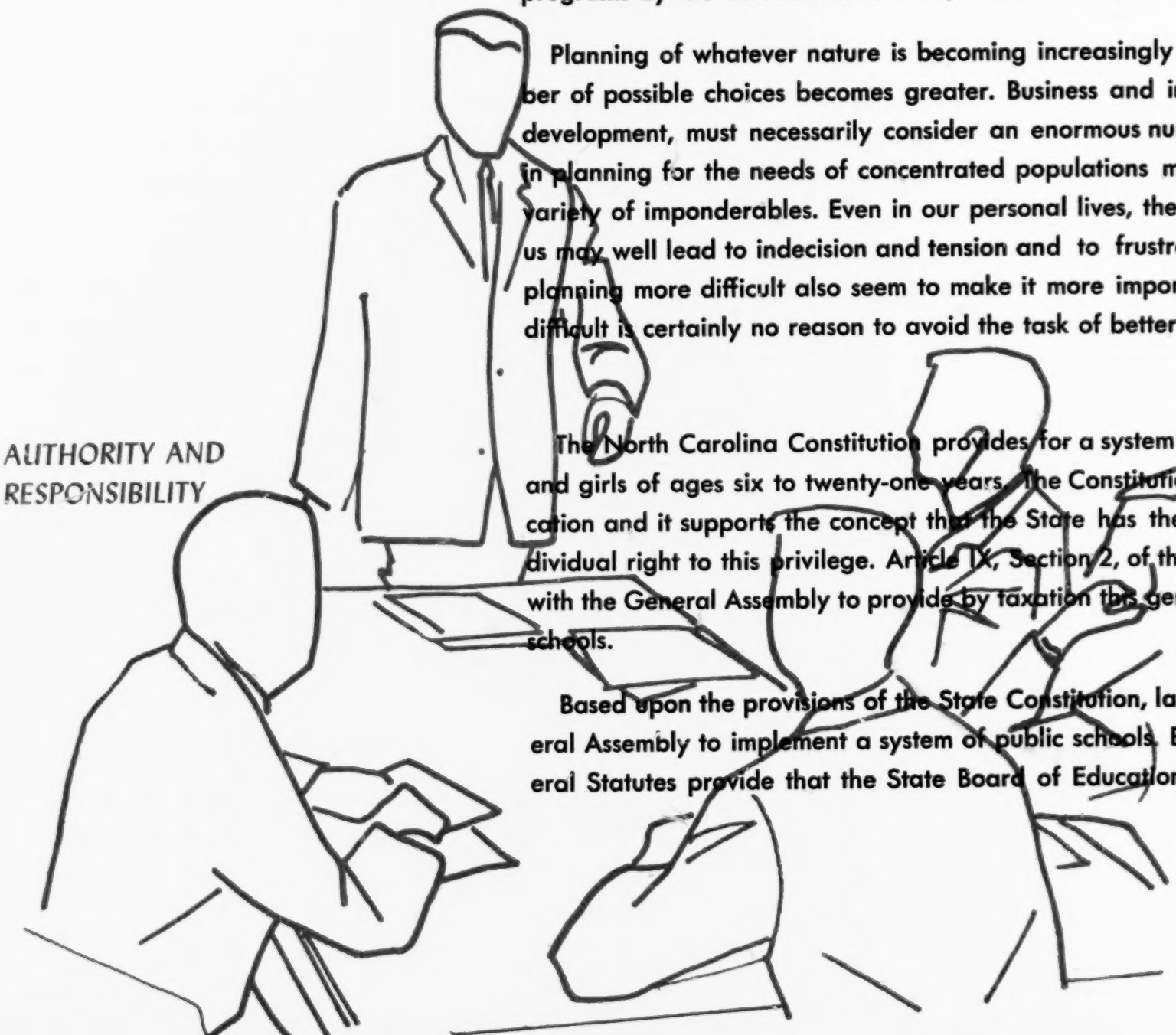
Fourth, the broadening programs of education and the occasional fragmentizing thereof through a multitude of specialized programs will require improved organizational methods and systems.

Fifth, some practical matters and situations also will demand improvements in educational planning. The financial limitations, whether necessary or not, will require more orderly and less haphazard and less emotionally motivated expenditures of educational money.

Sixth, old boundaries between administrative units of local government or of school systems may no longer be valid. This will require greater coordination of effort and organization among adjoining communities.

Seventh, it is likely that any program of financing school buildings from sources other than local funds will include the requirement that each administrative unit submit a well-thought-out plan of expenditure for such school building dollars.

These, among others, are reasons why improvement in the planning of educational programs by the administrative units, their boards and administrators, will be imperative.



Planning of whatever nature is becoming increasingly difficult and complex as the number of possible choices becomes greater. Business and industry, in looking toward future development, must necessarily consider an enormous number of factors. Cities and regions in planning for the needs of concentrated populations must look at and evaluate a vast variety of imponderables. Even in our personal lives, the large number of choices open to us may well lead to indecision and tension and to frustration. But the facts which make planning more difficult also seem to make it more important. Therefore, just because it is difficult is certainly no reason to avoid the task of better planning.

AUTHORITY AND RESPONSIBILITY

The North Carolina Constitution provides for a system of free public schools serving boys and girls of ages six to twenty-one years. The Constitution indicates the importance of education and it supports the concept that the State has the responsibility to enforce the individual right to this privilege. Article IX, Section 2, of the Constitution places responsibility with the General Assembly to provide by taxation this general and uniform system of public schools.

Based upon the provisions of the State Constitution, laws have been enacted by the General Assembly to implement a system of public schools. Both the Constitution and the General Statutes provide that the State Board of Education shall be vested with the respon-

sibility for general supervision and administration of a free public school system. The State Superintendent of Public Instruction, as the constitutional administrative head of the public school system, is authorized to direct all matters relating to the supervision and administration of the public school system, except the supervision and management of the fiscal affairs.

The Constitutional and statutory authority are bases for public education. Although the State Board of Education and the State Superintendent of Public Instruction have been charged with this responsibility, local boards of education have been delegated certain responsibilities.

Educational planning is a vehicle by which these provisions can be carried out. Even though specific sections of existing Statutes define the scope of delegated responsibility and authority for both State and local administration and supervision of the public schools, decisions for providing a system of free public education require sound judgment based upon intensive study and planning for the future.

BASIC CONCEPTS OF EDUCATION

A good school provides for the development of the educational needs of each individual pupil. This implies a comprehensive program if it is to meet the needs and interests of all youth. It is not the purpose of the public school to train youth in one limited narrow or preconceived curriculum, but rather to give them opportunities for broad educational experiences whereby they may become independent, competent citizens who can think for themselves as members of a free society. If this basic principle is accepted, and it must be if we expect our democracy to survive, the public schools must provide a challenging educational opportunity for each child.

A child's growth is continuous as he develops mentally, socially, emotionally, and physically from total dependency at birth to maturity in adulthood. The ideal public school program provides for the developmental needs of all children from kindergarten through grade twelve. Therefore, the following basic concepts should be kept firmly in mind in the development of an improved program:

kindergarten

A kindergarten program that provides the readiness experience to assist the child in making the transition from home and family environment to school and community life should be considered.

range of teaching

Elementary schools should, as far as possible, permit professional and qualified teachers in grades one through six to teach within a reasonable range of grades with the expressed responsibility for providing learning experiences for each child in keeping with his mental, emotional, social and physical interests and capabilities.

development of child

At about age 12, or grade 7, the child begins to develop adult characteristics which necessitate special experiences commensurate with this developmental age to enable the youth to make an orderly transition from home dependency to responsible, competent, adult citizenship. As a youth grows and his interests and capabilities expand, the curriculum must be broad enough and flexible enough to challenge his many individual differences.

skilled teachers

A good school is staffed by highly skilled and educated classroom teachers who will perform their assigned tasks within the framework of policies established by a board of education. High quality performance of the curriculum suggests a minimum of at least one teacher for each instructional field.

enrollments

A good school has a pupil enrollment sufficiently large to permit opportunity for both cooperative and competitive activities. The converse situation may develop where too many pupils are brought together in one location and other problems are created.

economic operation

A good school has a reasonable degree of economic efficiency. If economy is to be achieved, it must be on the basis of a quality operation through efficient servicing of a sufficient area with an optimum number of pupils.

adequate plant

An adequate school plant provides special facilities for each area of instruction, with flexibility and adaptability of classroom furniture and equipment which contribute to the instructional efficiency and breadth of opportunity. General service areas should become part of any complete school plant.

community center

The school is the center of cultural and educational activities in most communities and therefore, should plan its facilities to provide services for adults.

local control

Local control of schools will be maintained whenever the citizens served by the school select the board of education and continue to communicate with this representative body that formulates the local school policy.

competent staff

Competent administrators and teachers will be secured and retained to better advantage when there are satisfactory teaching conditions and professional relationships.

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WHAT IS EDUCATIONAL PLANNING?

"Educational Planning," as the term is used in this publication, involves the total planning process from the initial determination of an educational need to the implementation and evaluation of an improvement program.

This publication presents in sequential order the steps which are believed to be the appropriate process of educational planning. It may appear that much of it deals with the planning of facilities. It should be noted, however, that the first step deals with identifying and analyzing educational needs and facility needs. Determining educational needs and solving educational problems—these are the heart of the process. These needs will determine the instructional program and the staff; these in turn are guides to the appropriate solution of facilities problems.

Therefore, educational planning is more than just building a new school. The total process involves: (1) evaluating the educational opportunities available, (2) determining changes to be made, (3) formulating plans by which the two can be brought together, and (4) projecting the plan of action which should be undertaken.

School officials need to plan carefully as they proceed toward the objective of assisting a community in providing adequate and educationally sound school programs. Three major steps have been identified, each of which should be in the proper sequence to insure completeness and adequacy. They are:

STEP I
IDENTIFY AND ANALYZE EDUCATIONAL AND FACILITY NEEDS

The initial step in educational planning is to identify and analyze the needs. Without a doubt, this is the most important activity in the planning process and it should precede all other phases. This step includes two phases. The first is the self-evaluation which should be a local effort to determine a satisfactory educational program by analyzing the needs of the community and evaluating how well these needs are being met. The second phase is an educational survey that should be a realistic, thorough and objective appraisal of the educational program and facilities by specialists from outside the community.

STEP 2

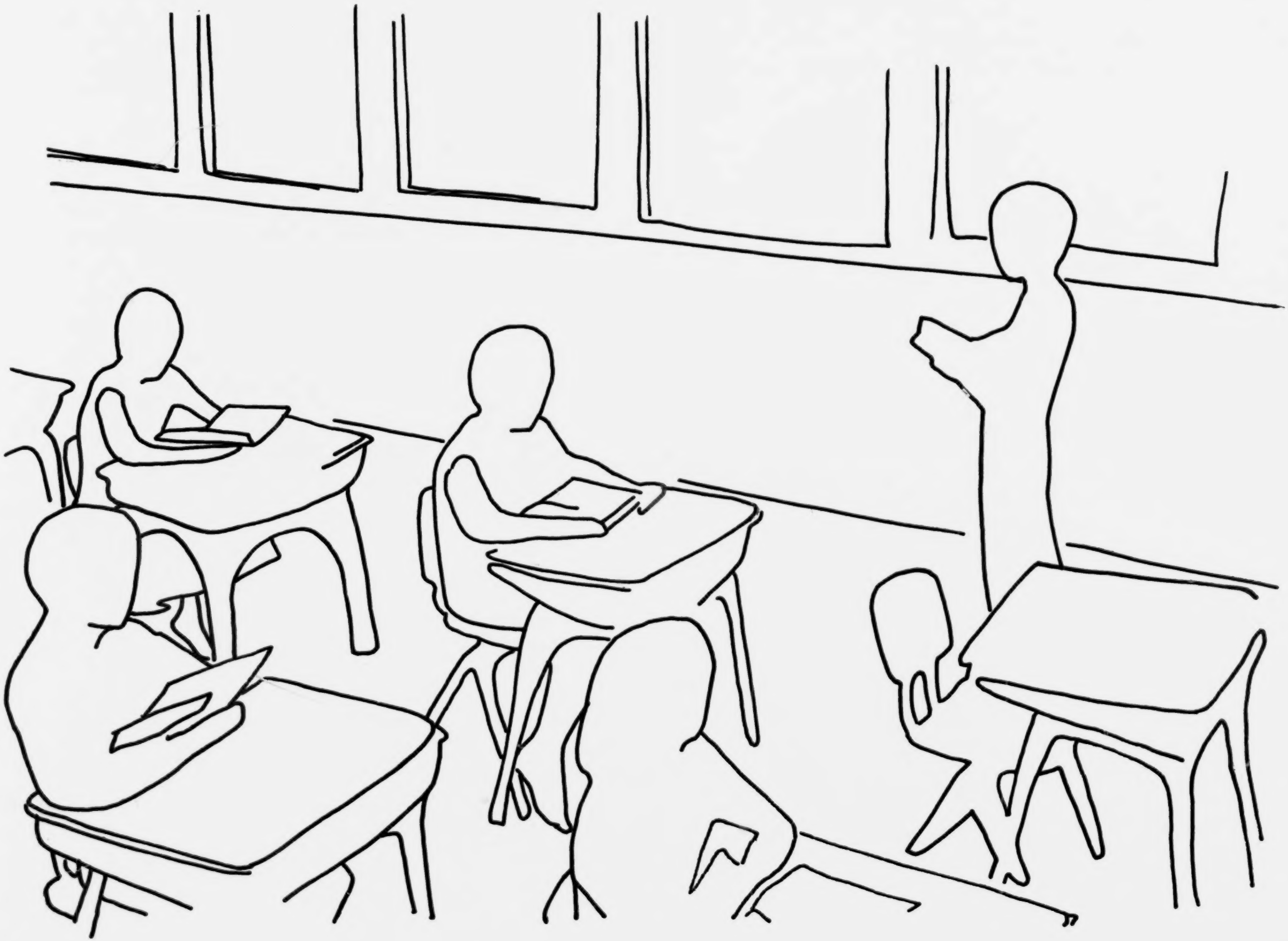
ADOPT AND IMPLEMENT
A PLANT IMPROVEMENT PROGRAM

If step 1 indicates a need and suggests a plan of action, a plant improvement program should be initiated. This step takes into consideration the employment of specialists, the development of educational specifications, the preparation of preliminary architectural drawings, and the acquisition of public acceptance of the improvement plan.

STEP 3

COMPLETE AND EVALUATE
THE EDUCATIONAL
PLANNING PROCESS

The final step involves the preparation of final architectural and construction plans and specifications, the selection of the furniture and equipment, the construction and utilization of the new facilities, and an evaluation of the improvement program.



STEP ONE

IDENTIFY AND ANALYZE EDUCATIONAL AND FACILITY NEEDS

The identification and analysis of the educational and facility needs for a school require thorough and extensive study of all factors that affect school programs at the local level. The heart of the planning process is determining educational needs and solving educational problems. These needs will determine the instructional program and staff—which in turn guide to the appropriate solution of the facility problem. Step 1 should be considered as a continuous process that involves a determination of trends, objectives and content of the educational program and the facilities needed to house the program. For ease in identifying the processes to be used, this step is subdivided into two phases. These phases are: (1) self-evaluation and (2) educational survey. A minimum of one year is needed to accomplish this process in most situations.

PHASE A: SELF-EVALUATION

The self-evaluation has as its purpose the responsibility for determining a system-wide educational program to be accomplished by analyzing the needs of school children and evaluating how well these identified needs are being met. Due to the nature of this phase, the responsibility for the study lies with the local administration. The wise administrator will utilize the services of an educational consultant to obtain advice, counsel and guidance in making the study.

PHASE B: EDUCATIONAL SURVEY

The educational survey is a realistic, thorough, and objective appraisal of the educational program and facilities by specialists. In addition to evaluating and utilizing the findings in the self-evaluation, the survey should recommend a plan of action that suggests methods by which the use of existing programs and facilities may be brought together to meet the needs.

PHASE A - SELF-EVALUATION

Since there is a direct relationship between the school and the community, the educational program should be studied to determine how it can fulfill its proper place in society. Such a study involves interrelationships of the educational program to community activities and public attitudes toward the expansion of community services.

BY LOCAL ADMINISTRATION

In an effort to determine the educational needs of the community, the local school officials must initially determine the characteristics of the community and the educational needs of their clientele. In making the self-evaluation study, all those factors in the community affecting the educational program should be studied.

Much information is available to assist in the identification and analysis of the educational needs. Some of this information is available in the official school records, while other information may be acquired from public institutions and organizations. Appendix A includes a list of agencies which provide informational service of this type.

EDUCATIONAL NEEDS OF THE COMMUNITY

PEOPLE TO BE SERVED

A study of the community, its history, traditions, culture, geography, and its economy with the possible changes is important in an attempt to determine the educational needs of children. The responsibility of the school to the community and to society should be of concern, as well as the relationship of the school to other influential community forces, such as the home, church, private or parochial schools, and institutions of higher learning.

PUPIL POPULATION

A prediction of the future school population is an integral part of planning for the future. Information should be collected and studied that will lend validity to predictions. In the projection of pupil statistics, the following variables need to be studied:

- *changes in characteristics of population*
- *migration of pupils in and out of district*
- *presence of nonpublic schools*

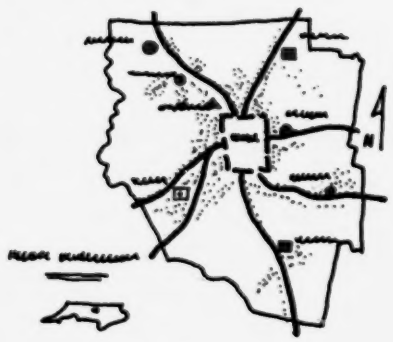
- *changes in the holding power of schools*
- *recent or future changes in administrative unit lines*
- *changes in school administrative organization*

To project or predict future enrollments, official statistics for past years should be tabulated. It is not enough that the future enrollments be predicted just once. On the contrary, this is a continuous process which requires annual attention. Projections may be made for individual schools, or a group of schools in a community, or for an entire administrative unit.

A *Pupil Population Chart,* as shown in Appendix B[1], is an example of the form used by the Division of School Planning in determining projected enrollments.

[1] *Included in the appendix is a discussion on how to use the* PUPIL POPULATION CHART. *Copies of this chart are available from the State Department of Public Instruction for use by local administrative units.*

PUPIL RESIDENCE



Determining where students live and where pupil population is increasing or decreasing is an annual requirement. "Spot maps" record such information and assist in readily determining trends. These may be made with the assistance of principals, teachers, bus drivers, and interested citizen groups. A color scheme may be used to indicate pupils in the different age groups, such as: pre-school children, elementary pupils, secondary pupils, and adults. If the spots or dots indicating the residences of pupils are drawn on transparent sheets of paper or plastic, several such sheets for successive years can be superimposed over a map, making it possible to see changes in the pupil population.

INSTRUCTIONAL PROGRAM

The purpose of the self-evaluation is to determine that the educational program is based upon the educational needs of pupils. A study of the curriculum content, its depth and scope, is imperative. It is important that the following factors be studied in determining the educational needs:

- *parental expectations of the school*
- *responsibility of the school to all children*
- *contribution of the school to success in life*
- *the extent to which the program fulfills the expectations of all citizens*

- *the activities of graduates upon completion of the school program*
- *the nongraduate and his opportunity for employment*
- *vocational opportunities for youth in the community*
- *regulatory requirements for graduation*

TEACHING METHODS

Long-range planning, especially when new facilities are involved, is concerned with methods of instruction. School officials should give consideration to staff qualifications and experience, teaching methods, and teaching materials, including the use of mechanical teaching aids. A study of this aspect of the educational program should give attention to the following items:

- *the best and most productive methods of teaching*
- *discernible trends in teaching*
- *the compatibility of the existing facilities with existing teaching methods*
- *the use of newer media in teaching*
- *the training, experience, and ability of the teaching staff to use new methods and devices*

ADMINISTRATIVE ORGANIZATION

The school administrative organization should be designed to permit maximum use of the educational purposes and processes. The organizational pattern usually refers to the types of schools, such as elementary, junior high, senior high, or union. Particular attention should be given to such considerations as the minimum, optimum and maximum school size for effective instruction, efficiency of operation, convenience to students, and the staffing requirements.

COMMUNITY SERVICES

The schools are just one of the local agencies that contribute to life in a community. The relationship of the schools to community services that attempt to contribute to family living should be determined. Some of the local agencies that provide assistance and information are: public libraries, cultural activities and organizations, public health, public welfare, and community recreational programs. Consideration should be given to the following activities:

- *community facilities available for public use*
- *community need of space for public assembly*
- *number and adequacy of public libraries*
- *the community recreational program*
- *availability and use of local health officials*

COMMUNITY ATTITUDES

School programs are constantly confronted with change to meet new demands from society. Study of the community's attitudes and plans regarding private nursery schools and their relationship to public school kindergarten programs should be considered. New aspects of the educational program, such as special education, vocational education, adult education, physical education, fine arts, safety and driver education, and other programs, require thorough study. Educational needs should be identified in an effort to determine the extent to which the schools should accept the responsibility for meeting these needs. Therefore, school officials should seek the community attitudes in the following areas:

areas of education

- *community views regarding nursery schools and kindergartens*
- *program plans for the atypical child*
- *discernible trends in vocational education programs*
- *program needs for adult education*
- *program needs for pupils in the upper elementary grades*
- *advantages and disadvantages of homogeneous grouping*
- *community views toward higher education*

PHASE B - THE EDUCATIONAL SURVEY

An educational survey provides an efficient and professional means of evaluating educational and facility needs. It involves an authoritative, realistic, thorough, and objective appraisal of all those factors that influence a complete educational system. It evaluates and utilizes the data and findings of the self-evaluation.

PURPOSE

The purpose of the educational survey is to suggest ways of bringing existing facilities and programs together with the needs as identified in the self-evaluation. The ultimate goal of the survey is to recommend a plan of action that will permit the accomplishment of the purpose.

Depending upon the situation and the specific needs, the survey can be comprehensive or limited to parts of the total. The initial survey should be comprehensive, whereas follow-up surveys may be limited to study of specific problems.

TWO TYPES OF SURVEYS

There are two distinct types of surveys. One may be termed the expert type which includes a few specialists who study the situation and make suggestions and recommendations on the educational needs. Often this expert type service is provided by consultants from outside the community. Another type of survey may be called the committee survey. Such a survey normally involves many specialists of diversified interests. Either type will fulfill the requirements, depending upon the situation and the purposes at the local level.

It is frequently desirable that the survey be made by unbiased persons from outside the community. Therefore, in most situations, it will be necessary for local school officials to secure the services of those agencies that have personnel trained to provide this kind of advisory service.

Upon written request the School Planning Division of the State Department of Public Instruction will provide or cooperate in this type of advisory service.

OTHER CHOICES

- the local school staff with specialists from the State educational agencies acting in a consultative capacity
- other State educational agencies that provide a continuing survey service
- an out-of-State survey team composed of recognized educational specialists
- private consultative agencies that specialize in school survey work

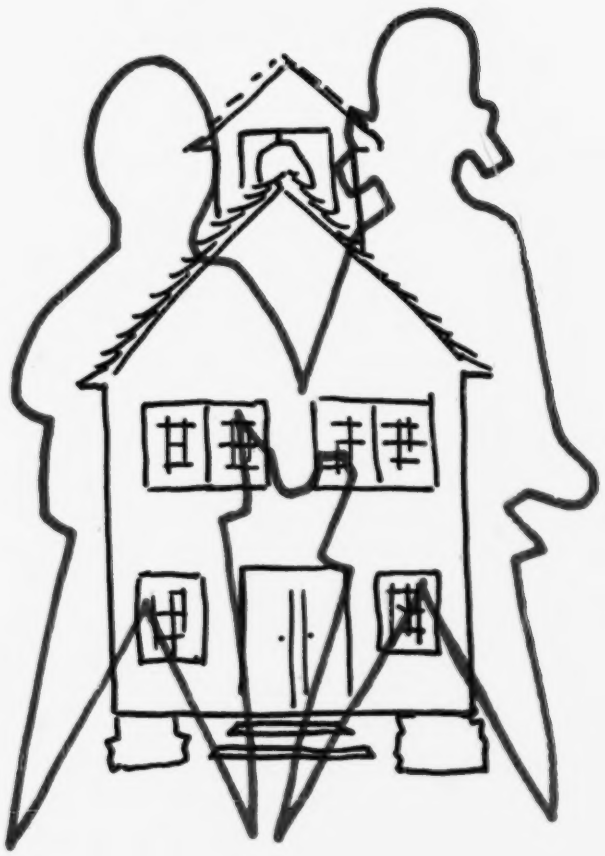
AREAS OF STUDY

The organization of the survey should center around the purposes of the survey. The ultimate objective is to determine a course of action that will be compatible with the aim of providing the best education for each child regardless of his ability. Therefore, consideration needs to be given to all planning principles that are involved in planning for the future.

A comprehensive school survey takes into consideration all those factors which make for a complete educational program. A limited survey might involve parts of the more comprehensive survey depending upon the purpose for such study. For example, there may be occasions when the immediate problem is entirely facility in nature. This may require an analysis and evaluation of the existing facilities.

The organization of the study should facilitate the ultimate goal—that of suggesting a plan of action. It should facilitate accurate solutions. Some suggested major items to be considered in a survey are:

EDUCATIONAL PROGRAM



instructional program

- *completeness of the offerings*
- *depth of the offerings*
- *extent to which offerings meet the needs*
- *teacher-pupil ratio*
- *class sizes*
- *teacher preparation*
- *teaching methods*
- *characteristics of instructional personnel*
- *special education*

school services

- *school food*
- *health*
- *guidance*
- *clinical*
- *psychological*
- *attendance*

school organization

- *grade organization*
- *kindergarten*
- *adult education*
- *minimum, optimum, and maximum school size*
- *administrative policies and practices*
- *central services*

POPULATION

school enrollments

- *trends*
- *holding power*
- *graduate follow-up*
- *dropouts*

community census

- *birth rate*
- *socio-economic trends*
- *percentage of child-bearing age adults*

pupil location

- *spot maps*
- *trends*
- *distances*

TRANSPORTATION

traffic routes
geographical barriers
condition and adequacy of existing transportation equipment

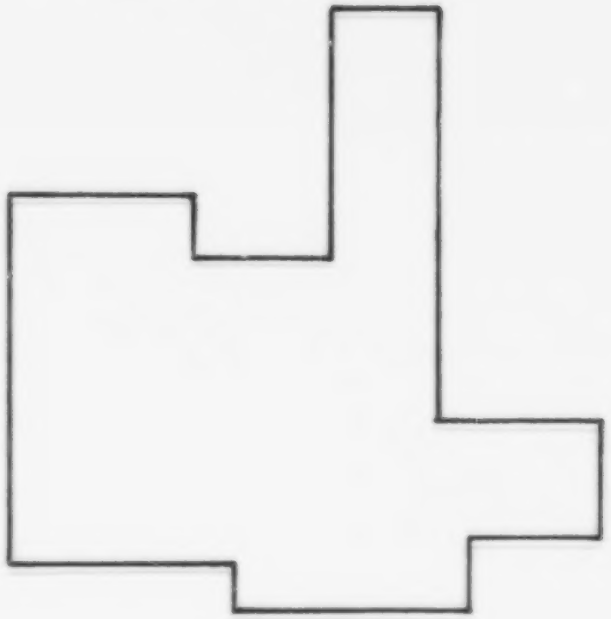
SCHOOL PLANTS

educational adequacy

- *instructional efficiency*
- *program*
- *special areas*
- *convenience to students*
- *community services*

sites

- *size*
- *location*
- *relationship to other community facilities*
- *condition and landscaping*



capacity

- *number of teaching stations*
- *adequacy of each station*
- *possible utilization of each station*

location

- *accessibility*
- *environment*
- *relationship to other buildings and rooms*
- *pupil location*

condition of facilities

- *age*
- *maintenance*
- *safety*
- *structural*
- *service systems*

equipment

- *condition*
- *adequacy*
- *size*
- *quantity*

utilization of existing plants

plant needs

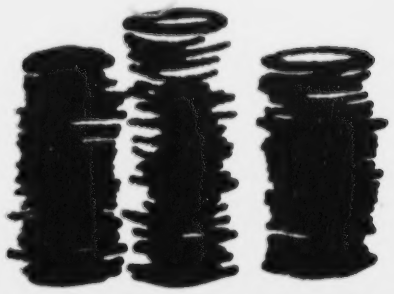
- *immediate*
- *long-range*

plan of action

ECONOMIC RESOURCES

financial capacity

- *tax levy*
- *bonding capacity*
- *sources of revenue*
- *reserves*
- *funds from Federal and State sources*
- *bonded indebtedness*
- *assessed valuation*
- *relationship of effort to potential*



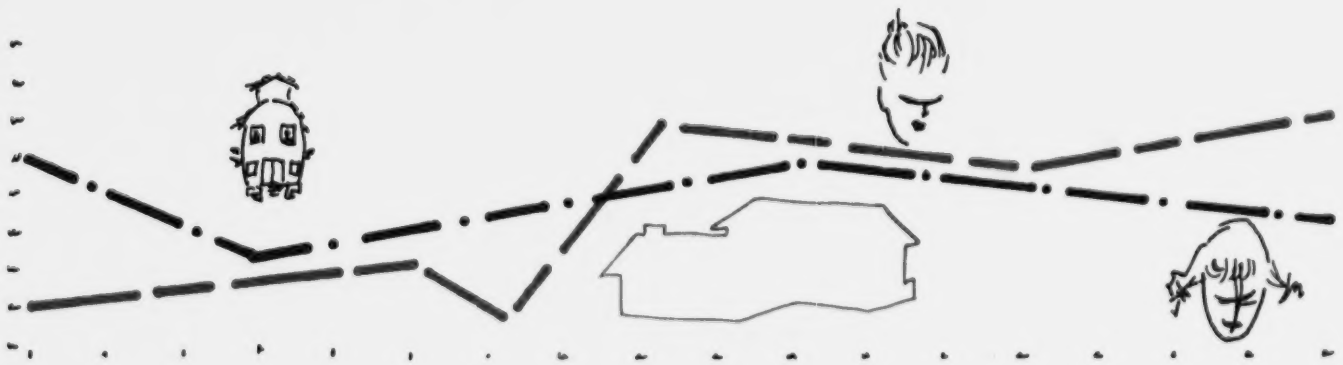
PRELIMINARY INFORMATION FOR A SURVEY

The information and data collected for the self-evaluation should be valuable to the educational survey in studying the needs and projecting a plan of action. The suggestions and recommendations of the survey should be supported by additional information. The local school officials should have available the following information:

POPULATION

student population

- *average daily membership for each grade and each school for a ten-year period CAUTION: Cases involving consolidation should pick up the total of all previous schools, or the complete data for the years the present school has existed.*
- *pre-school census for each age level*
- *spot map showing residence by either bus stops, city blocks, or geographic area. Grouping may include elementary, junior high, and senior high breakdowns.*
- *school attendance lines or school bus routes*

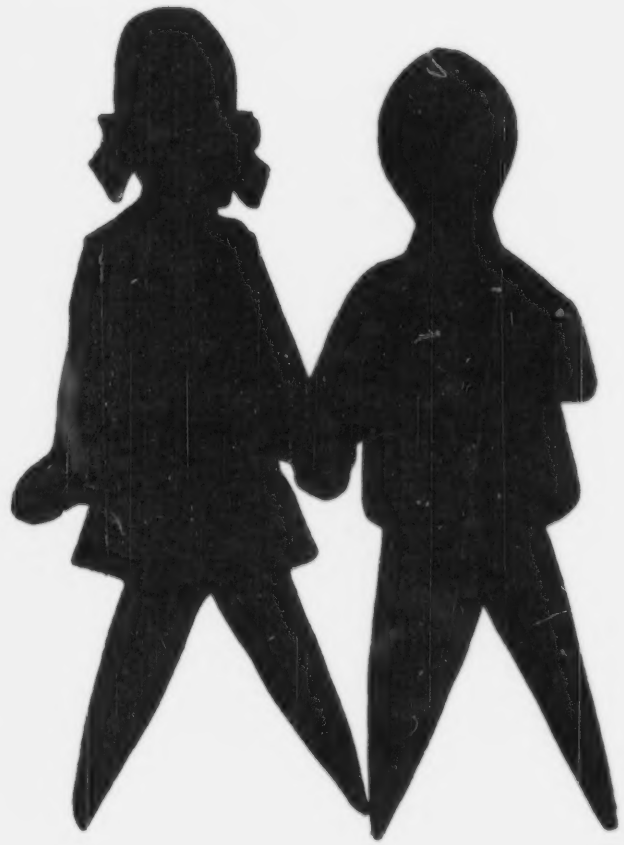


total population

- *census information*
- *percent of change for each decade*

COMMUNITY STUDIES, Copies of

- population projections
- land-use maps
- zoning maps
- thoroughfare or highway plans
- extension of city limits
- plans for urban redevelopment
- others, such as utility plans, water, sewer, telephone, gas and electricity



INSTRUCTIONAL PROGRAM, Copies of

- curriculum studies
- accreditation self-studies
- program offerings for each school
- dropout studies
- class sizes
- class schedules
- graduate follow-up studies
- graduation requirements

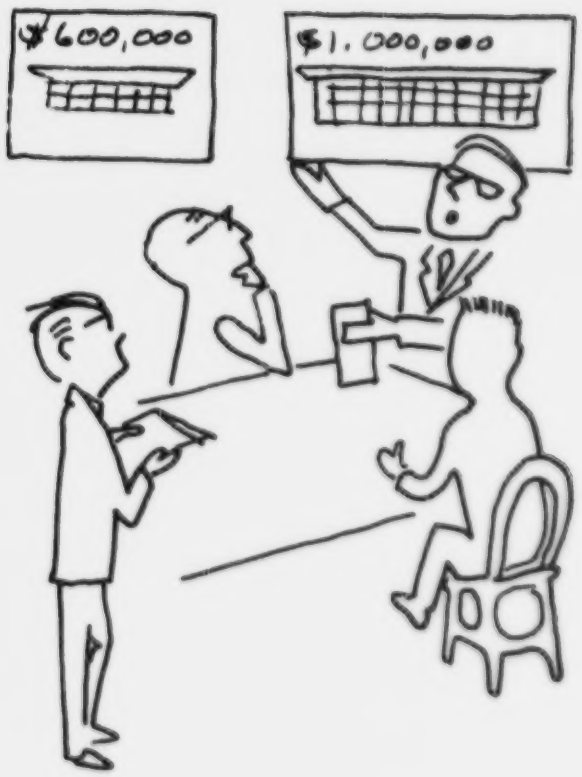
PERSONNEL

- teacher preparation and experience
- number of supervisors and their responsibilities
- number of teachers for each school
- number of maintenance personnel for each school

SCHOOL PLANTS

- locate on a map of administrative unit and indicate type of administrative organization
- site plot for each and show size in acres
- date of construction of each plant to include dates of additions
- floor plans of each showing size of each instructional space and use for each class period
- capacity of service systems (heating, electrical, sewer)

FINANCE



current expense expenditure
- *amount from local sources*
- *amount from State sources*
- *amount from Federal sources*

capital outlay (5 - year period)
- *amount from local sources*
- *amount from State sources*
- *amount from Federal sources*

bonded indebtedness
- *for schools*
- *for community*

valuation
- *present*
- *date of last valuation*
- *percent of true valuation*
- *bonding capacity*

tax rate for schools and all purposes
supplementary tax
- *amount voted*
- *amount levied*

average per pupil expenditure for the past ten-year period
student fees (amount and purpose)
income from sources other than that derived from taxes

ACCEPTANCE OF THE REPORT

Once the report is completed, it should be submitted to the local school officials for acceptance, rejection, or modification. The official report should be made to those school officials that have requested the study

The local school officials, including the board of education and the administrative staff, should be provided an opportunity to review the contents of the study. The following steps are suggested for the analysis of the study prior to official action.

SUGGESTED STEPS FOR ANALYSIS

- analyze the various sections of the study
- compare recommendations with the known educational needs and the long-range objectives
- make an analysis of each separate recommendation
- evaluate the suggested steps for the improvement program
- determine the feasibility of such a program
- estimate and plan an acceptable rate of progress

STEP TWO

ADOPT AND IMPLEMENT A PLANT IMPROVEMENT PROGRAM

If the first step of educational planning (identify and analyze educational and facility needs) indicates a need for additional facilities, it is the responsibility of the local board of education to initiate the plant improvement program. The board has the obligation to develop and establish policy, adopt basic criteria, and initiate the procedures. Action to be taken, however, requires the guidance of professional educators and therefore should be delegated to the local school administrator.

It is fundamental to the process of long-range planning that the board of education provide a stabilizing and guiding effect through its adoption of operating procedures, basic principles, and policy statements. The adoption of basic principles may serve as a basis for staff direction in planning, as a general guide on the types of programs and facilities, and as a vehicle for public information and support. The importance of these principles should not be taken lightly because they are fundamental to planning functional buildings.

PLANNING PRINCIPLES

facilities should:

- **provide spaces and equipment to house the predetermined activity or instructional program**
- **provide a safe and healthful environment**
- **be located on an accessible and convenient site**
- **permit maximum utility and should be economical to maintain and operate**
- **be designed for community as well as pupil use**
- **comply with recognized design standards**
- **include adequate space for quality educational programs**

BACKGROUND ELEMENTS

- The board of education has written policies which are conducive to the process.
- The philosophy, aims, and objectives of the community have been determined.
- The curriculum for the identified project has been developed and defined.
- This particular need has been identified as an integral part of the long-range plan.

PHASES OF IMPLEMENTATION

- selection and employment of specialists
- preparation of educational specifications
- development of preliminary architectural plans
- obtaining public acceptance

PHASE A - SELECTION AND EMPLOYMENT OF SPECIALISTS

Specialists provide expert advice, assist in the development of wholesome relationships, and counsel towards satisfactory solutions. For these reasons, the selection and employment of the specialists should be based upon sound qualifying criteria and clear-cut responsibilities because they may be the key to a successful improvement program. The most frequently used specialists are the architect, the educational consultant, and the legal consultant.

THE ARCHITECT

The architect may be the key to a successful plant improvement program. The insight and creative ability he brings to the project in terms of solving problems may determine the success of the project. In normal situations, the duties of the architect will be similar to others, but the problems to be solved will be unique to each community. The selection of the architect is one of the most significant and important decisions to be made by the board of education. Salesmanship and friendship appeal should not be the criteria for the selection.

CONSIDERATIONS FOR SELECTION

- integrity
- willingness to plan and cooperate
- knowledge of design techniques
- ability to supervise construction
- amount of school construction experience
- demonstrated skill and creativity in design
- record of his relationship with previous boards of education and contractors
- source of engineering service
- location of the architect's office
- size of his staff
- ability to devote time to the project

STEPS IN SELECTION

- An interview with each interested architect should be conducted by the board of education and the administrator. In most cases the interview should not be a public meeting and should allow sufficient time for a fair interview.
- A visit should be made to some recently completed projects designed by each architect being considered for employment. The object of these visits should be to observe the architectural and functional features.
- After careful consideration, the board of education should narrow the field to two or three firms. Further interviews should secure a better understanding of the architectural services being offered and develop clear understandings with regards to responsibilities of the firm and the board.
- The employment of the architect should be the result of official board action.
- The contract for the services of the architect should be specific and should contain a fully understood agreement. Some items to be included in the contract are:

CONTRACT

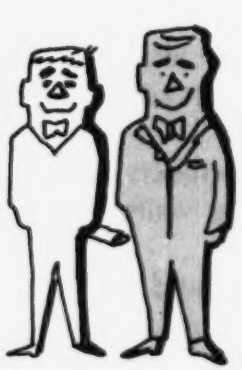
- terms of the contract
- method of termination
- rate of commission
- method and time of payments
- approval of plans
- extent of construction supervision
- terms of final inspection and acceptance of the completed project
- responsibilities of the architect

THE LEGAL CONSULTANT

If the board of education does not have a regularly employed school attorney, it certainly will need the advice and counsel of a legal consultant during the improvement program. This specialist should be selected and employed with the utmost of confidence. He should have a working knowledge of all applicable schools laws.

Although the responsibilities of the legal consultant will depend upon the situation, care should be taken to acquire the services of the consultant that can perform the following duties:

duties



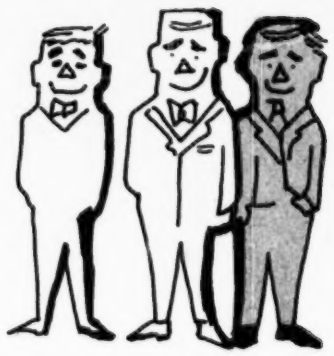
- review all contracts
- validate legal descriptions
- establish voting procedures and processes
- assist with the financing program
- consult and advise on the sale of bonds
- advise with regard to the bond redemption program
- advise the board on all legal aspects

THE EDUCATIONAL CONSULTANT

The services of the educational consultant can be used throughout the educational planning process on a continuing basis or for a specific assignment. His services are of special importance during the self-evaluation, the educational survey, the development of the educational specifications, the selection of furniture and equipment, the orientation of the school staff and the evaluation of the planning process. Therefore, the importance of qualifying criteria in the selection of this specialist should not be overlooked.

QUALIFICATIONS

- knowledge of all phases of educational planning
- cognizant of the latest educational theory
- experienced in evaluating school plants
- diversified educational experience
- comprehension of teaching methods
- sound in basic education concepts
- capable of producing research
- available as needed



PHASE B - PREPARATION OF EDUCATIONAL SPECIFICATIONS

Educational specifications may be defined as a means of communication between the educator and the design professions. They are the communicative media through which the educator identifies and defines the educational need and suggests an educational solution to the architect that should stimulate his creative thinking and provide a favorable climate for intelligent solutions. Adequately written educational specifications should provide the architect a base upon which he develops his architectural plans in preparation for the issuance of building specifications.

GOOD CHARACTERISTICS

- are the responsibility of the educator
- are based on a predetermined instructional program
- state facility and program needs and leave method of satisfying the needs to the design professions
- stimulate creative thinking
- serve as a means of communication between educator and architect
- are free of rigid prescription

DIVISION OF SCHOOL PLANNING 7 64
N. C. DEPARTMENT OF PUBLIC INSTRUCTION

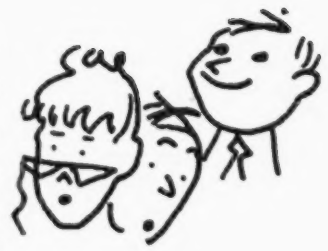
SELECTION OF THE STUDY COMMITTEE

Since educational specifications are a solution for the profession, the responsibility for their preparation lies with the educator. The organization and selection of the study committee will depend upon the local situation because every community is unique in terms of personnel, objectives, and understandings.

The instructional program and the grouping of grades should serve as a guide in the organization of the educational specifications study. The results of the self-evaluation should have identified the curriculum and should serve as a guide for planning. If the curriculum has not been determined previously, time will need to be spent identifying it during the development of the educational specifications.

The educational consultant can provide valuable assistance to the development of educational specifications because his knowledge and experience should be of assistance in the organization of the study and in the interpretation of the finished product to the design professions.

Although the size of the study committee should be reduced to a minimum number because large groups may become difficult to manage and organize, some situations may necessitate a sizeable number. Regardless of the situation, it is desirable to maintain a small, highly selective group to attain the most expedient and productive result.



The matter of personnel selection to serve on the working committee is often a difficult task. Since each situation is different, the ultimate decision rests with the local school administration. It is suggested that the director of the study committee be the anticipated principal of the school under study.

RESPONSIBILITIES OF THE DIRECTOR

- coordinates the work of the committee
- suggests resource materials and personnel
- establishes time schedules
- assists in organization of the facility visitation schedules
- analyzes trends
- provides guidance to the committee in organizing materials
- reports, as a representative of the committee, to the administrator

Since the preparation of educational specifications is an educational solution, the composition of the working committee should include primarily the professional educators. There are some important considerations in the selection of the membership of the committee.

COMMITTEE SELECTION

- time available to spend on the project
- interest and knowledge of the special project
- imagination and creative ability
- knowledge of the subject area to be studied
- ability to work with people
- interest in the improvement of schools

PEOPLE AND THEIR RESPONSIBILITIES

BOARD OF EDUCATION

- adopts permissive and guiding policies
- approves the official and written product
- authorizes the services of consultants
- employs the specialists

ADMINISTRATOR

- designates the director of the study committee and assists in the selection of the other members of the committee
- provides leadership, guidance, and assistance to the working committee throughout the study
- evaluates the progress
- interprets the results to the board of education, the staff, and the citizens of the community

THE WORKING COMMITTEE

- is responsible for the organization of the study
- accepts responsibility for the assignment and plans its activity
- identifies the needs, objectives, and goals of the school
- prepares a written report based upon the findings of the study
- reports to the administrator through their director

DIVISION OF SCHOOL PLANNING 7 64
N. C. DEPARTMENT OF PUBLIC INSTRUCTION

EDUCATIONAL CONSULTANT

- provides guidance, resource materials and planning information
- interprets discernible trends and new programs
- assists in the editing of the finished specifications
- interprets the finished specifications to the design professions

ARCHITECT

- acts in the capacity of an observer and consultant on programming
- serves as an advisor on architectural considerations

COVERAGE OF EDUCATIONAL SPECIFICATIONS

Inevitably the coverage of educational specifications arises. Although educational specifications should not restrict the creative imagination of the design professions, at the same time sufficient information is necessary before the architect can proceed with the preliminary drawings. Therefore, the educational specifications should be written in a concise and clear manner providing information on the program activities. Some of the information might be:

SCHOOL PHILOSOPHY

These statements should be applicable to the entire administrative unit. The architect needs this information in analyzing the problem.

BACKGROUND INFORMATION

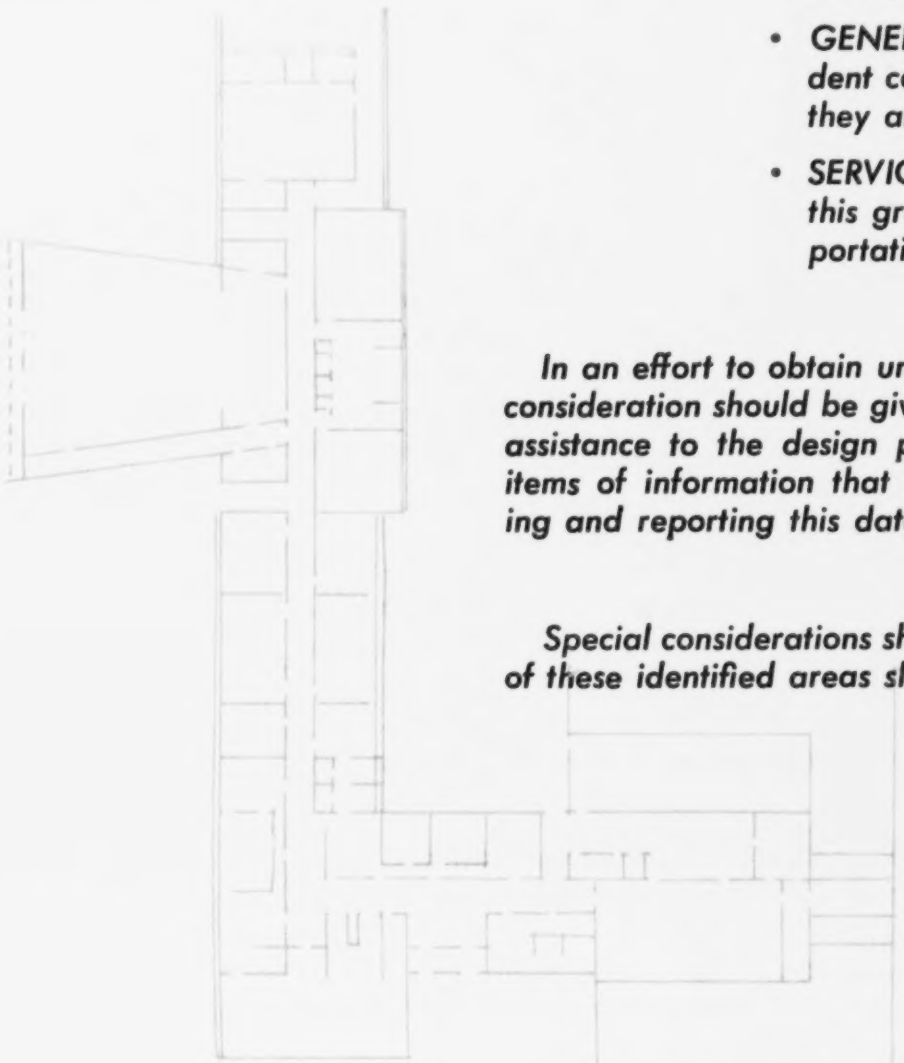
These statements should provide the architect with information about the entire administrative unit and its relationship to the specific improvement project. Such information might include:

- *a map of the administrative unit showing geographical features*
- *a spot map showing pupil residence*
- *a statement on the school system, such as something about the board of education, organization, kinds of schools, size of schools, community attitudes, financial conditions, etc.*

GENERAL CONSIDERATIONS ON TYPE OF SCHOOL

The type of school, the initial and ultimate capacity, community use, kinds of activities, and special considerations influence the architectural, mechanical, and electrical treatment of the entire facility.

SPECIAL CONSIDERATIONS ON AREAS



- *INSTRUCTIONAL USE AREAS: This type includes consideration for all distinct subjects to be taught in the school, such as: language arts, fine arts, business, vocational, kindergarten, etc.*
- *GENERAL USE AREAS: The administrative suite, instructional materials center, student commons, guidance, and others would be categorized under this type because they are facilities that the entire school staff and student body would use.*
- *SERVICE USE AREAS: Several facilities and activities could be considered under this grouping, but the more common might be: custodial, school food service, transportation, storage, etc.*

In an effort to obtain uniformity in the information gathered and reported, some consideration should be given to the kinds of information that might be of maximum assistance to the design professions. General considerations should deal with those items of information that are applicable to the entire facility. The method of recording and reporting this data will depend upon the local situation.

Special considerations should be applied to all special areas. The contents of each of these identified areas should have statements dealing with the following subjects:

- philosophy and objectives
- activities to be housed
- personnel
- space needs
- spatial relationships
- equipment
- special provisions

For example, the educational specifications for a practical arts laboratory would include a statement on the philosophy and objectives of the practical arts program; a discussion of the activities to be performed; a suggestion as to how many teaching stations and the number of pupils to be enrolled; a statement regarding the space needs as reflected in the kinds of activities; the spatial relationships of the practical

arts program to other programs; a listing of the special equipment to be housed; and a discussion on any special provisions such as the need for mechanical ventilation.

Each of the other identified areas, whether it is of instructional, general, or service use, should be treated in a similar manner.

ESTIMATE SPACE NEEDS

The projected enrollments, the instructional programs, the educational specifications, and the teaching methods, as previously determined, should be the basis for estimating the classroom needs. The population projections reflect the recent growth patterns. They may not show all the expected changes, such as births and migrations; but in the rather stable situation, enrollment information should be valid for all practical purposes in planning for the future.

The purpose for estimating the number of spaces or teaching stations is to obtain maximum use of all space and to eliminate as many scheduling conflicts as possible. Since the process is rather technical and will vary with each situation, it is suggested that it be the responsibility of the specialists.

It is possible to determine the number of teaching spaces for a new project. The ingredients for this process are:

- number of pupils expected in each of the various subject areas
- the number of class sessions each week for each subject area
- the anticipated class size
- the total number of class sessions each week
- the anticipated percent of utilization of the instructional space for each subject area

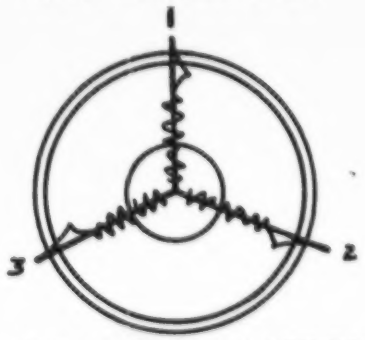
Appendix C, Check List of Space Required, has been designed to serve as a guide or a tool for the architect and the school officials to use in consolidating the information on the number and the kind of spaces required for the project under study. The educational specifications should be used as a basis for determining the information to be recorded. The check list supplements rather than replaces the specifications.

PHASE C - DEVELOPMENT OF PRELIMINARY ARCHITECTURAL PLANS

As soon as the site has been selected and the educational specifications have been developed, the architect should be instructed to prepare interpretative preliminary studies and cost estimates. The preparation of the architectural drawings and specifications usually involves several steps. Therefore, sufficient time should be allotted to this process in order that an adequate plan may be developed.

The architect needs considerable information prior to beginning any constructive design layouts.

TIME SCHEDULE



It is important to have a reasonable and realistic time schedule for the preparation of plans and specifications and for the construction of the project. Too often the schedule is overlooked or compressed to the detriment of the project. Appendix D, Time Schedule Form, may be used as a guide in establishing a schedule. It should be cooperatively developed by the school officials and the architect.

SITE INFORMATION

It is not possible to plan satisfactorily any school without also designing the site. It is assumed that the site has been acquired for each specific project. This is an essential step which should precede the development of preliminary sketches and plans.

design factors

- transportation by school bus, private cars, or public conveyances, and deliveries by service vehicles require driveways, loading and unloading areas and parking spaces
- pedestrian walks, leading to the structures on the site from surrounding properties and serving the several areas on the site itself, need to be planned to avoid unnecessary conflict with vehicular traffic and to minimize administrative problems
- major outdoor areas for physical education, recreation and athletics must be appropriately related to the buildings and to patterns for vehicular and pedestrian traffic
- utilities and services, such as water supply, gas, electricity, and sewage and waste disposal facilities, are necessary to the functions of the buildings

- proper drainage of surface water without undesirable erosion must be provided
- conservation of desirable natural features for instructional and aesthetic purposes and the enhancing of the site and structures through appropriate planting and seeding are necessary to a good school environment

By careful consideration of the questions in Appendix E, Planning for Site Development and Traffic, it may be possible to do a more satisfactory job of planning the total educational facility.

FINANCIAL BUDGET

The preliminary drawings should be fairly complete in an effort to provide a perspective of the proposed structure and to permit an estimate of the cost of the project which provides guidance in the development of a budget.

Appendix F, Financial Budget, is a form which may assist in planning a realistic budget which is vital to a successful project. This information should indicate the phases and contracts for which the architect will be given responsibility. If certain contracts or installations will not be in the scope of the architect's responsibility, the responsible agency should be identified.

PRELIMINARY STUDY AND DRAWINGS

During the early conferences, the local school officials and the architect should discuss the educational specifications, the facility arrangement, and the plans for coordinating the planning process. Based upon the earlier acquired information, the architect should prepare some sketches which should be discussed by all parties.

It is important that the preliminary studies be reviewed in terms of meeting the objectives, educational specifications, and the financial ability of the administrative unit. Checking the preliminary drawings should be comprehensive and detailed to insure adequacy.

Preliminary studies and drawings should be submitted to the Division of School Planning, State Department of Public Instruction, for review and suggestions.

PHASE D - OBTAINING PUBLIC ACCEPTANCE

Although not all improvement programs will necessitate the submission of a bond proposal to the public, a continuing public relations program is imperative. The citizens of the community are entitled to information about what their schools are doing. A well-planned long-range public relations program provides one of the best opportunities to keep the public informed. Even with a continuing program, a more intensive program may be needed at the time when additional construction funds are to be voted.

SCHOOLS BELONG TO THE PUBLIC

One basic concept which must be kept in mind is that the schools belong to the public. The public is entitled to know the future plans for their schools. School officials cannot take it for granted that the people will support a program that they don't fully understand.

The information program should inform the public completely and honestly on all phases of the improvement proposal. The information which is made public should avoid the appearance of being evasive. It should provide in general terms the plan and should give cost data.

Since the educational program is the only justification for the request for funds for new facilities, the official representatives of the public, the board of education and its administrator, should share the responsibility for informing the public.

All effort should be put forth in securing the cooperation and assistance of each individual and all community groups interested in the improvement of the schools. The use of interested community citizens is often the most effective approach to informing and selling the public on the proposal.

USE OF COMMUNICATIVE MEDIA

The techniques and communicative media used in transmitting the information to the citizens will vary according to the community. All effective means should be utilized. Some of the most common are:

- open house
- school displays
- newspaper articles, pictures and editorials
- radio and television news shorts
- civic group appearances
- panel discussion participation

In summary, some suggestions that might be used during this phase of the plant improvement process are:

- to prepare informational brochures for public consumption
- to provide all local citizens with complete and accurate information
- to solicit the cooperation and assistance of all community, civic, religious and professional organizations that are interested in school improvement
- to hold small group meetings which are usually more effective than large mass public meetings
- to permit the legal consultant to supervise the legal procedures involved in the process
- to seek professional assistance and guidance from the other specialists

STEP THREE

COMPLETE AND EVALUATE THE EDUCATIONAL PLANNING PROCESS

Responsibility for the development of final plans and specifications, as well as the construction and inspection of new facilities, should be placed with the design professions.

An equally important phase is the utilization and evaluation of the new facility. The utilization includes the orientation of the staff to the new facility, the selection of furniture and equipment, and the presentation of the completed project to the public.

CONSIDERATIONS FOR THIS STEP

- **Design professions in cooperation with the local school officials and the educational consultant should develop a detailed description of each instructional space.**
- **Design professions should develop the general construction data to include the architectural, mechanical and electrical aspects.**
- **Local school officials should instruct the architect to proceed with the development of final plans and specifications.**
- **Final plans and specifications should be submitted to the Division of School Planning, Department of Public Instruction, for review and approval by the State Superintendent of Public Instruction prior to their being submitted to prospective bidders.**
- **Committees composed of school staff members and specialists should study and assist in the selection of furniture and equipment.**
- **Inspection of the project should precede acceptance by the board of education.**
- **An orientation session for the school staff on how to use the educational features and the mechanical equipment should be a part of the improvement program.**
- **The new facility should be presented to the public to promote interest, support and pride in the school.**
- **An evaluation of the new program and facility should be made to determine the effectiveness of the planning process.**

PHASE A - PREPARATION OF FINAL PLANS AND SPECIFICATIONS

Since the development of final plans and specifications is a detailed and technical process and is the responsibility of the planning professions, this task should not be initiated until the project has been approved. Approval may be the result of a favorable vote of the citizens on a bond proposal or, if voter approval is not necessary, through approval by responsible school officials.

Much additional information is needed by the planning professions prior to their development of the final plans and specifications. Also, there are other considerations that should enter the planning process simultaneously with the development of the final plans and specifications.

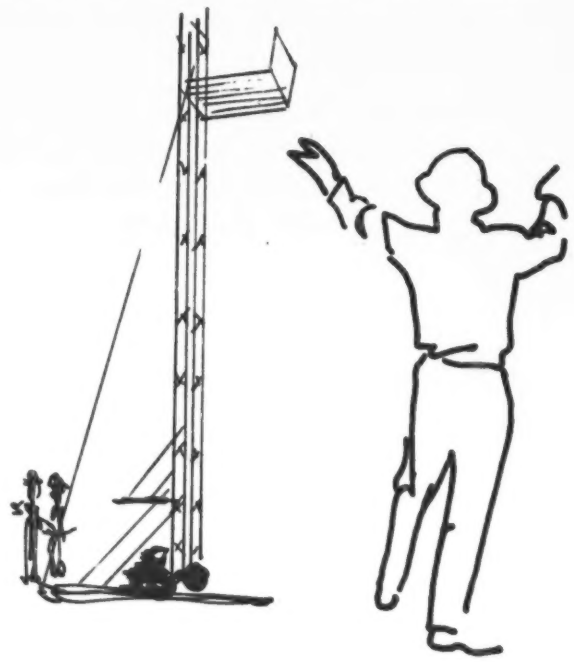
DETAILED DESCRIPTION OF EACH INSTRUCTIONAL SPACE

For each instructional space, additional information is needed to supplement the educational specifications before the architect can design the final plans and develop the final specifications. A special caution should be noted because the gathering of this information does not replace the need for the information obtained during previous steps. This information should include not only size and shape of the space, but the use and control of illumination, the type and kind of communication equipment to be used, the amount and kind of fixed equipment, the mechanical and electrical systems, the wall, floor and ceiling finishes, and the utility services.

This is an opportunity for the school people and the specialists to get together and share their experiences with various types of materials, finishes, equipment, and the environmental systems. A trip to and a study of existing facilities in the school system as well as other systems will be invaluable in determining the details of this phase. Include even the smallest detail because it could be important and easily overlooked.

Appendix G provides a guide for determining and recording this detailed information that should assist the architect in consolidating the information presented in the educational specifications.

GENERAL CONSTRUCTION DATA



It is advisable to put into writing information that affects the quality of construction. This information should be obtained through the cooperative efforts of the school officials and the design professions. Any information gathered should not inhibit the imagination of the architect and engineer, nor should it restrict the architectural design. This should be considered as supplemental information for the purpose of improving the planning.

The general construction data include information on the fire rating, construction system, the type of doors and windows, and the general finishes throughout the building. Mechanical information should include heating, air conditioning, ventilating and plumbing requirements. The electrical and communication system of each space should be identified and stated clearly, because there should be a variance among spaces.

Appendix H is a general guide to the construction character, to the installations, and to the finishes. Where necessary, types, sizes and brand names should be shown. Where a particular type or size is not desired by the local school officials, this information should be indicated. For convenience, this check list is subdivided into three categories: (1) architectural, (2) mechanical, and (3) electrical.

REVIEW AND APPROVAL OF FINAL PLANS AND SPECIFICATIONS

Local school officials should take sufficient time to review final plans and specifications prior to their approval. Due to the technical nature of such plans, the architect should prepare a brief summary of them in an effort to expedite an understanding of their contents. This summary might include a discussion about the following topics:

- *instructional spaces to include sizes, types of finishes, kinds and control of illumination, methods of temperature control, and types of windows and doors*
- *site to include site elevations and location of the building, walkways, driveways, parking areas and outdoor instructional areas*
- *construction to include types of materials, the nature of the design and flow and control of traffic*
- *heating and ventilation systems*
- *plumbing systems*

The board of education should officially approve the plans as soon as each detail has been checked to their satisfaction. The approved plans and specifications should be signed by the appropriate officials prior to their being advertised for bids.

The North Carolina Statutes (G. S. 115-130) require that the State Superintendent of Public Instruction shall approve plans and specifications for all new construction of public school buildings. Therefore, final plans and specifications must be submitted to the Division of School Planning for review and approval of the State Superintendent. Such action should take place prior to the advertising for bids.

PHASE B - SELECTION OF FURNITURE AND EQUIPMENT

The selection of furniture and equipment may make the greatest contribution to the educational utility of the new facility. This step should parallel the architectural planning and should have been a part of considerations during the development of educational specifications. Since the selection of furniture and equipment is a vital phase of educational planning and an educational problem, the school staff should study and assist in its selection. To be effectively used, furniture should:

criteria

- be compatible with the proposed educational activities
- be complete, safe, practical and economical
- be functional
- provide educational utility
- have flexibility
- be efficient
- satisfy sense of aesthetics
- have quality and durability

PHASE C - COMPLETION AND UTILIZATION OF NEW FACILITY

The success of any improvement project is dependent upon the manner in which it is completed and used. Too often improvement projects are forgotten once the contracts have been awarded. It is important that the project be inspected prior to acceptance. Equally important is the use of the facilities by the local school staff. Therefore, the project should receive attention to the following items:

CHECK LIST

- **An inspection by all responsible parties, inciuding personnel from the Division of School Planning, should be made prior to acceptance by the local board of education.**
- **An orientation and utilization session on how to use the new facility by the instructional staff, the administrative staff and the maintenance staff should be a part of any improvement program prior to putting it to use.**
- **Local school officials should report to the public through a well-planned dedication program.**

INSPECTION, APPROVAL AND ACCEPTANCE OF THE PROJECT

When the project is completed, it should be inspected before acceptance. The Division of School Planning, Department of Public Instruction, provides an advisory architectural and engineering inspection service. This service is available upon request by the superintendent of schools.

PROCESS FOR INSPECTION

- **The contractor should notify the architect that the project is ready for inspection.**
- **The architect, the engineer, the contractor, and the local school representatives should make a preliminary inspection.**

- If deficiencies are noted, the contractor should be permitted sufficient time to correct them.
- In accordance with G. S. 133-1.1 (b), the board of education should obtain from the architect and the engineer *Certificate of Compliance* that indicates the contractors have completed the work according to plans and specifications.
- A detailed and comprehensive inspection that uses the final plans and specifications for reference purposes should be held with a representative of the Division of School Planning.
- The contractor should maintain a list of the changes or corrections to be made.
- Sufficient time should be given to the contractor to make the necessary corrections prior to reinspection.
- The board should delay acceptance of the project until it has been completed satisfactorily to all parties.
- Final payment should be withheld until acceptance of the project by the Board of education.
- The final acceptance should be in writing and entered in the minutes of an official board meeting.

ORIENTATION OF THE SCHOOL STAFF

A new facility will not function to its maximum capacity unless its operators, the school staff, know how to use its educational features and mechanical equipment.

An inservice program on how to use the new facility should include all parties that were involved in its planning, particularly the specialists—educational consultant, architect, engineer, and equipment manufacturer's representatives.

In an effort to insure maximum use, the local school administrator might consider these possibilities:

for maximum use

- *Stimulate, encourage and familiarize the school staff to make effective and efficient use of all equipment and facilities in an inservice program.*

- *Request that the manufacturer's representatives and engineers assist with the instruction of the custodians and maintenance staff of the operation, use and maintenance of all technical equipment.*
- *Use the services of the architect, the engineer and the educational consultant during an orientation and utilization session.*

PRESENTATION TO THE PUBLIC

Since most improvement programs are financed from local taxes, the citizens of the community should be given an opportunity to inspect their new facilities. A school improvement project may be a major endeavor for some communities. Also, if voter approval was necessary to finance the program, the public should have the satisfaction that comes with knowing what their schools are doing and how their tax money is being spent.

Some type of written report to the citizens is desirable. This report should include all information that is of interest to citizens, such as cost; size, and instructional program improvements.

The total improvement program should be climaxed with a well-planned dedication program. A dedication exercise provides an excellent opportunity to promote interest, support and pride in the school and the community. If the public understands what the schools are doing, they usually will be more amiable towards future requests for improvement. Therefore, use a dedication exercise and an open house to promote school and community understanding.

PHASE D - EVALUATION OF THE IMPROVEMENT PROGRAM

The test of any improvement program is how well it performs. If its performance approximates the anticipated results, pride of accomplishment can be realized. The time, effort and money spent in the educational planning process can be considered a prudent expenditure if success has been realized.

In addition to determining how well the project is performing, an evaluation of the process should provide information and ideas for improvement in future planning. It is inevitable that changes will occur. The practical solution to keeping abreast of these changes is through evaluation. Chronologically, the evaluation phase is last, but this is not to imply that it is least important. Maybe it is the most important activity to take place in the educational planning process.

The evaluation of the instructional environment and its objectives should be made in terms of the activities in which pupils and teachers engage. The materials and equipment that they use from day to day are a part of the environment.

The final test is what happens to children. Do the environmental conditions please, inspire and satisfy the pupils or do they annoy, depress and disturb them?

Answers to this question should come as a result of an evaluation program. Although the following list of questions is not considered to be all-inclusive, persons making the evaluation might seek answers to these kinds of questions:

EVALUATE PROGRAM

- *Is the instructional program comprehensive in depth and scope?*
- *Are the instructional spaces adequate and functional?*
- *Is the new facility meeting the educational needs of all pupils?*
- *Is the total school plant functional?*
- *Does the school effectively and efficiently serve the student population?*
- *Is the furniture and equipment performing their functions?*
- *Is the school plant safe, healthful and efficient?*
- *Is the staff making maximum use of the facilities?*

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APPENDICES

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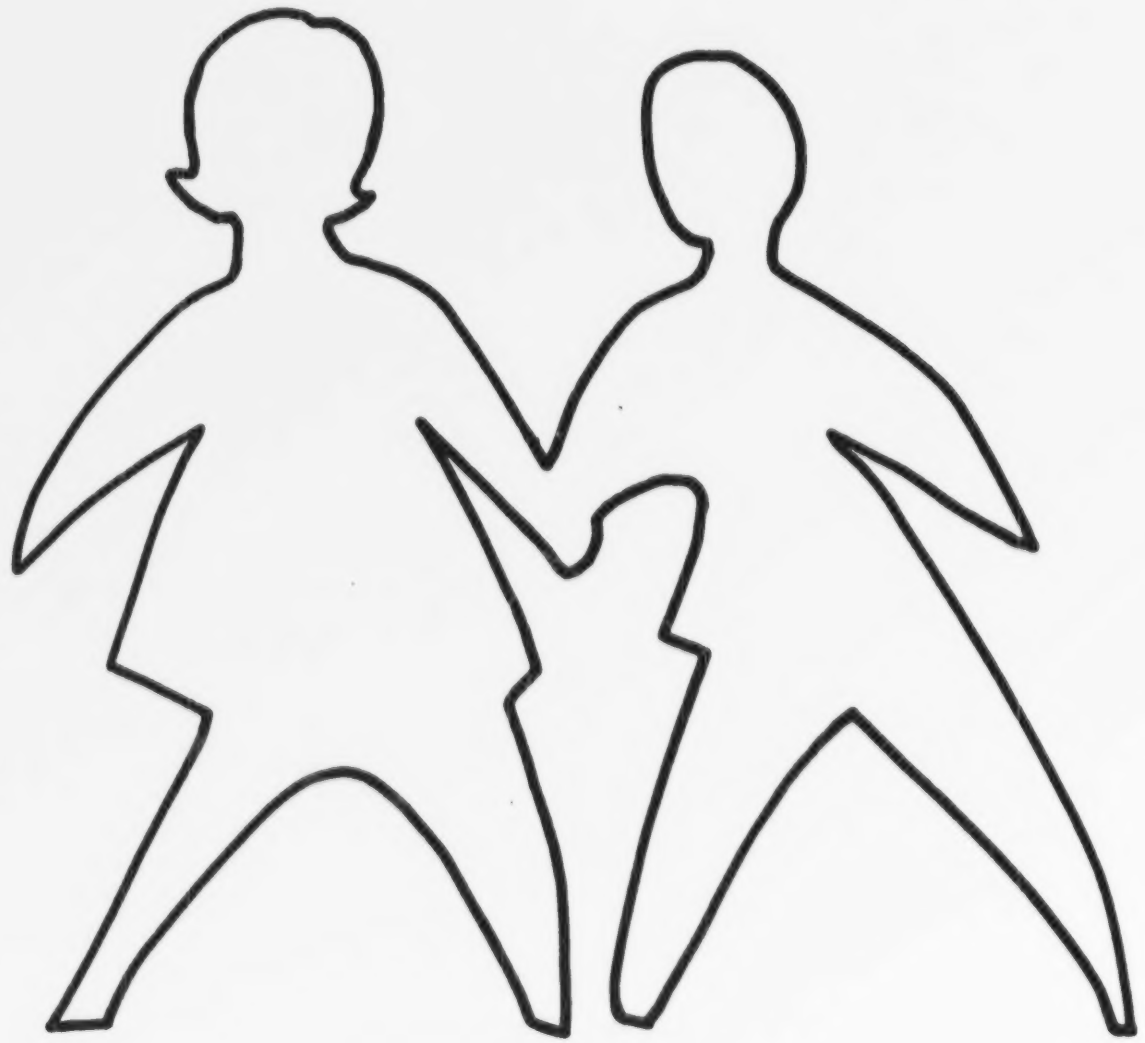

APPENDIX A SOURCE OF STUDY INFORMATION

KIND OF INFORMATION	SOURCE
POPULATION	
o General	
• Birth rate	United States Census Bureau
• Morbidity and mortality rate	State and local boards of health
• Vital statistics	United States Department of Health, Education and Welfare
• Farm surveys	Federal and State Departments of Agriculture
• Population projections	North Carolina State Highway Commission
o School	
• Statistical reports	Biennial Report of State Superintendent of Public Instruction
• School census	Local school system
• Graduate follow-up	
• Guidance records	
• Dropout study	
• Population projection	
• Spot map	
• Transportation study	
SOCIOLOGICAL	
• Research studies	State and local Welfare Departments
• Agency studies	United States Census Bureau
• Agency records	United States Department of Health, Education and Welfare
	Private and parochial schools
	Colleges, universities, and professional organizations
	Mental health clinics
	Local health departments
	State and local correctional authorities
	Character building agencies
ECONOMIC	
• Reports	United States Census Bureau
• Studies	United States Department of Commerce
• Budgets	United States Department of Agriculture
	United States Department of Health, Education and Welfare
	Employment Security Commission
	North Carolina Department of Welfare
	North Carolina Department of Tax Research
	North Carolina Department of Revenue
	Local Government Commission
	State Board of Education
	Legislative Study Commissions
	State and local budgets

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APPENDIX B PUPIL POPULATION CHART

FOLLOW THESE STEPS:

1. On a form similar to the chart below, tabulate data for past years. It is recommended that "average daily membership" figures be used rather than enrollment, although "average daily attendance" statistics will also serve.

2. Determine the "retention ratios" (RR). Examine the figures for one group of children for two successive years; for example, compare the sixth grade one year with fifth grade of the preceding year. Calculate the "retention ratio" by dividing the sixth grade figure (90) by the fifth grade of the previous year (95); the answer, 0.95, is the "retention ratio." This ratio will generally be near 1.00, more or less. Calculate the retention ratios for all grades for all years on the chart.

3. Calculate an "average retention ratio" (ARR) for each grade. Use an ARR which reflects the trend. Sometimes the retention ratio in recent years is different from the ratio of eight or ten years ago.

4. Project future enrollments by applying the ARR to the figures in the most recent year for which official figures are available to estimate figures for the next year. Continue this process until the chart is complete.

5. First grade estimates for future years must be made on the basis of the best information available. If significant birth data are available, they may be used. Pre-school census data may be compiled and used. Otherwise a "reasonable" guess may have to be resorted to.

6. Projections may be made for individual schools, of a group of schools in a community, or for an entire administrative unit.

PUPIL POPULATION CHART — Source of Data: Official Average Daily Membership — Computed by: Joe Doe — Date: 7-3-[illegible] — School(s): Acorn School — Administrative Unit: Pine County

YEAR	Membership in each grade and retention ratios (RR) between grades																							TOTALS					
	Grade 1	RR	Grade 2	RR	Grade 3	RR	Grade 4	RR	Grade 5	RR	Grade 6	RR	Grade 7	RR	Grade 8	RR	Grade 9	RR	Grade 10	RR	Grade 11	RR	Grade 12			Grades 1-8	Grades 9-12	Grades 1-6	Grades 7-9	Grades 10-12	Grades 1-12	
1947-48	92		100		73		97		82		85		70		56		45		25		26		20			655	116				771	
		.99		.89		.97		.93		.98		.94		.93		.89		.84		.84		.88									
1948-49	103		91		89		71		90		80		80		65		50		38		21		23			669	132				801	
		1.02		.96		.99		.96		.97		.97		.94		.92		.86		.84		.90									
1949-50	100		105		87		88		68		87		78		75		60		43		32		19			688	154				847	
		.95		.99		.97		.99		.95		1.02		.97		.89		.85		.81		.90									
1950-51	95		95		104		85		87		64		83		76		67		51		35		29			689	182				871	
		.94		1.02		.96		.98		.99		1.02		.94		.90		.85		.82		.94									
1951-52	96		90		97		100		83		86		65		78		69		57		42		33			695	201				896	
		.96		.91		1.03		.97		1.00		.93		.95		.83		.87		.82		.86									
1952-53	89		92		82		100		97		83		80		62		65		60		47		36			685	208				893	
		.97		1.02		1.03		.95		.94		1.02		.90		.81		.87		.80		.85									
1953-54	100		87		94		85		95		91		85		72		50		57		48		40			709	195				904	
		.96		1.03		1.00		.95		.95		1.01		.94		.86		.88		.77		.89									
1954-55	101		96		90		94		81		90		92		80		62		44		44		43			724	193				917	
		.96		.96		.99		.96		.96		.98		.93		.80		.85		.84		.93									
1955-56	96		97		92		89		90		78		88		86		64		53		39		41			716	197				913	
		.96		.97		.98		.96		.97		.97		.95		.90		.86		.87		.90									
1956-57	99		92		94		90		86		87		76		85		77		55		46		35			709	213				922	
		.96		.98		.99		.96		.96		.98		.94		.87		.86		.82		.89									
1957-58	100		95		90		93		86		83		85		71		72		66		45		41			703	224				927	
		.96		.98		.99		.96		.96		.98		.94		.87		.86		.82		.89									
1958-59	100		96		93		89		89		83		81		80		60		62		54		40			711	216				927	
		.96		.98		.99		.96		.96		.98		.94		.87		.86		.82		.89									
1959-60	100		96		94		92		86		86		81		76		70		52		51		48			711	221				932	
		.96		.98		.99		.96		.96		.98		.94		.87		.86		.82		.89									
1960-61	100		96		94		93		88		82		84		76		66		60		43		45			713	214				927	
		.96		.98		.99		.96		.96		.98		.94		.87		.86		.82		.89									
1961-62	100		96		94		93		89		84		80		79		66		57		40		38			715	210				925	
		.96		.98		.99		.96		.96		.98		.94		.87		.86		.82		.89									
1962-63	100		96		94		93		89		85		82		75		67		57		47		44			714	215				929	
		.96		.98		.99		.96		.96		.98		.94		.87		.86		.82		.89									
1963-64	100		96		94		93		89		85		83		77		63		58		47		42			717	210				927	
		.96		.98		.99		.96		.96		.98		.94		.87		.86		.82		.89									
1964-65	100		96		94		93		89		85		83		78		65		53		48		42			718	208				926	

APPENDIX C

CHECK LIST OF SPACES REQUIRED

	NOW	FUTURE
PRIMARY CLASSROOMS		
a. Classrooms		
b. Storage		
c. Toilets		
ELEMENTARY ROOMS		
a. Classrooms		
b. Other		
LANGUAGE ARTS		
a. Classrooms		
b. Drama room		
c. Public speaking		
d. Language laboratory		
e. Other		
SOCIAL STUDIES		
a. Classrooms		
b. Teachers' rooms		
c. Other		
MATHEMATICS		
a. Classrooms		
b. Teachers' rooms		
c. Other		
BUSINESS EDUCATION		
a. Multi-purpose		
b. Typing		
c. Shorthand		
d. Bookkeeping		
e. Business machines		
f. Teachers' rooms		
g. Other		
SCIENCE		
a. General science room		
b. Biology rooms		
c. Physics rooms		
d. Chemistry rooms		
e. Chem. phys. rooms		
f. All-science rooms		
g. Teachers' rooms		
h. Project rooms		
i. Work rooms		
j. Storage rooms		
k. Dark rooms		
l. Other		
.....		

	NOW	FUTURE
PHYSICAL EDUCATION		
a. Outdoor fields		
b. Outdoor courts		
c. Other outdoor areas		
d. Indoor activity room		
e. Exercise room		
f. Dressing rooms		
g. Showers & toilets		
h. Laundry area		
i. Storage rooms		
j. Basket rooms		
k. Offices		
l. Lobby		
m. Public toilets		
n. Ticket room		
o. Concessions		
p. Seating		
q. Platform		
r. Other		
HOME ECONOMICS		
a. All-purpose		
b. Foods room		
c. Clothing room		
d. Living area, bath		
e. Other		
INDUSTRIAL ARTS		
a. Shop area		
b. Classroom		
c. Storage		
d. Other		
.....		
.....		
AGRICULTURE		
a. Shop area		
b. Classrooms		
c. Storage		
d. Toilets		
e. Office		
OTHER SHOPS		
TYPE		
a. Shop area		
b. Classrooms		
c. Storage		
d. Office		

	NOW	FUTURE
OTHER SHOPS		
TYPE		
a. Shop area		
b. Classrooms		
c. Storage		
d. Office		
DISTRIBUTIVE EDUCATION		
a. Classroom		
b. Storage and office		
ARTS		
a. Classrooms		
b. Teachers' rooms		
c. Storage		
d. Display		
MUSIC		
a. Classrooms		
b. Ensemble room		
c. Band rooms		
d. Orchestra room		
e. Choral room		
f. Practice rooms		
g. Office and library		
h. Uniform storage		
i. Instrument storage		
j. Other		
MULTI-PURPOSE		
a. Uses		
.....		
.....		
.....		
INSTRUCTIONAL MATERIALS CENTER		
a. Reading room		
b. Conference rooms		
c. Librarian's office		
d. Work rooms		
e. Storage rooms		
f. Classroom		
g. AV work room		
h. AV storage		
i. Book room		
j. Professional library		
k. Other		
.....		

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	NOW	FUTURE
AUDITORIUM		
a. Assembly		
b. Stage		
c. Dressing rooms		
d. Backstage toilets		
e. Scenery storage		
f. Scenery shop		
g. Other storage		
h. Projection room		
i. Green room		
j. Lobby		
k. Public toilets		
l. Ticket booth		
m. Concession		
n. Other _____		
_____		
LUNCHROOM		
a. Dining room		
b. Teachers' dining room		
c. Conference rooms		
d. Public entrance		
e. Lobby		
f. Public toilets		
g. Kitchen		
h. Dry storage		
i. Walk-in refrigerator		
j. Walk-in freezer		
k. Dishwashing area		
l. Staff rooms		
m. Manager's space		
n. Can storage		
o. Can wash		
p. Other _____		
ADMINISTRATION		
a. Public space		
b. Secretary		
c. Principal		
d. Toilet		
e. Assistant principal		
f. Deans		

	NOW	FUTURE
g. Conference		
h. Record storage		
i. Supply storage		
j. Vault		
k. Duplicating room		
l. Communication center		
m. Book storage		
n. Other _____		
_____		
PROFESSIONAL ROOMS		
a. Combination lounge		
b. Men's lounge		
c. Women's lounge		
d. Men's toilet		
e. Women's toilet		
f. Work room		
g. Other _____		
_____		
GUIDANCE		
a. Waiting room		
b. Counselor's offices		
c. Conference room		
d. Testing room		
e. Other _____		
HEALTH SERVICE		
a. Waiting room		
b. Examining room		
c. Boys' rest room		
d. Boys' toilet		
e. Girls' rest room		
f. Girls' toilet		
STUDENT ACTIVITIES		
a. Lounge		
b. Student government		
c. Publications		
d. Other _____		
_____		
_____		
_____		

	NOW	FUTURE
CUSTODIAL & SERVICES FACILITIES		
a. Boiler room		
b. Fuel room		
c. Electrical room		
d. Custodian's closet		
e. Custodian's toilet		
f. Maid's closet		
g. Maid's toilet		
h. General storage		
i. Outside storage		
j. Repair room		
k. Boys' toilets		
l. Girls' toilets		
m. Other _____		
OTHER		
a. _____		
b. _____		
c. _____		
d. _____		

APPENDIX D TIME SCHEDULE

	Number of Months
a. Date project assigned to architect	
b. Date program submitted to architect	
c. Date preliminary plans to be completed	
d. Date working drawings & specifications to be completed	
e. Date bids are to be taken	
f. Date construction to begin	
g. Date of final inspection	
h. Date of occupancy	

APPENDIX E PLANNING FOR SITE DEVELOPMENT AND TRAFFIC

PLANNING SERVICES AND SITE SURVEYS

a. Will a landscape architect be retained for this project? _____
b. Name and address _____
c. Will a soils and grading engineer be retained for this project? _____
d. Name and address _____
e. Who will survey the site? _____
f. When will the surveyed plot plan be delivered to architect? _____

INFORMATION ABOUT SITE

a. Property lines	_____	h. Area	_____
b. Contours	_____	i. Orientation	_____
c. Rock formations	_____	j. Existing drives	_____
d. Streams and ponds	_____	k. Existing play fields	_____
e. Vegetations and trees	_____	l. Existing buildings	_____
f. Existing highways	_____	m. Pertinent dimensions	_____
g. Adjacent roads and streets	_____	n. Other	_____

MASTER PLAN

a. Has a master site plan already been developed for this site? _____
b. Where is a copy available? _____
c. Note any revisions to be made in existing master plans. _____

SOIL CONDITIONS

a. Have soil tests been made? _____
b. Will such tests be made? _____
c. What is known of the soil conditions? _____

WATER

a. Municipal _____
b. Well _____
c. Elevated tank _____
d. Pressure tank _____
e. Other _____

SEWAGE DISPOSAL SYSTEM

a. Municipal _____
b. Septic tank _____
c. Sand filter _____
d. Health dept. appro. _____
e. Other _____

GAS

a. Natural _____
b. Company _____
c. Location _____
d. Bottle _____
e. Other _____

ELECTRICAL SERVICE

a. Location _____
b. Type _____
c. Company _____
d. Extent of responsibility _____
_____
e. Overhead or underground service
_____
f. Other _____

TELEPHONE SERVICE

a. Location _____
b. Company _____
c. Extent of responsibility _____
_____
d. Overhead or underground service _____
e. Other _____

TRAFFIC

a. No. of pupils walking _____
b. No. of pupils by bus _____
c. No. of pupils by auto _____
d. No. of buses _____
e. Will this school be a transfer point for buses? _____

PARKING AND SURFACING

AREA	QUANTITY	SURFACE MATERIAL	DRAINAGE
a. Drives			
b. Loading areas			
c. Parking			
Bus			
Bicycles			
Farm machinery			
Pupil			
Teacher			
Staff			
Visitor			
Spectator			
Other			

Any anticipated traffic or parking regulations _____

Special parking or traffic considerations _____

_____

RECREATION

a. What school activities will take place on the school property during non-school hours?

_____

_____

_____

_____

b. What other community use will be made of the school site and buildings?

_____

_____

_____

_____

C. Define responsibility for facilities during community use.

_____

_____

_____

_____

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PROVIDE FOR THE FOLLOWING ACTIVITIES OR FACILITIES AND INDICATE THEM ON THE MASTER SITE PLAN AT THE PRELIMINARY STAGE OF PLANNING.

	NO.	SURFACE MATERIAL
a. Archery		
b. Badminton		
c. Baseball		
d. Basketball		
e. Football		
f. Field hockey		
g. Golf		
h. Handball		
i. Hopscotch		
j. Horseshoe		
k. Kickball		
l. Paddle tennis		
m. Shuffleboard		
n. Skating		
o. Soccer		
p. Softball		
q. Speedball		
r. Tennis		
s. Tetherball		
t. Track & field		
u. Tumbling		
v. Volley ball		

NATURE AND CAMPING

a. Bog garden _____
b. Day camp _____
c. Nature study _____
d. Picnic _____
e. Shady play area _____
f. Other _____ _____
_____ _____

OUTDOOR INSTRUCTION

a. Crop demonstration _____
b. Forestry _____
c. Outdoor classrooms _____
Elementary _____
Library _____
Homemaking _____
Primary _____
Science _____
d. Other _____ _____
_____ _____

STRUCTURES AND EQUIPMENT

	NOW	FUTURE
a. Bleachers		
b. Field house		
c. Concession house		
d. Toilet building		
e. Stadium		
f. Ticket booth		

	NOW	FUTURE
g. Fence		
h. Night lighting		
i. Swimming pool		
j. Drinking fountains		
k. Fire hydrants		
l. Caretaker's house		

APPENDIX F FINANCIAL BUDGET

	AMOUNT	PERCENT OF TOTAL	RESPONSIBILITY OF OWNER	ARCHITECT	OTHER
a. Site acquisition	$_____	_____%	_____	_____	_____
b. Site development	_____	_____%	_____	_____	_____
c. General construction	_____	_____%	_____	_____	_____
d. Heating & ventilating	_____	_____%	_____	_____	_____
e. Electrical	_____	_____%	_____	_____	_____
f. Plumbing	_____	_____%	_____	_____	_____
g. Water supply	_____	_____%	_____	_____	_____
h. Sewage system	_____	_____%	_____	_____	_____
i. Kitchen equipment	_____	_____%	_____	_____	_____
j. Lab equipment, etc.	_____	_____%	_____	_____	_____
k. Other _____	_____	_____%	_____	_____	_____
l. Other _____	_____	_____%	_____	_____	_____
m. Fees _____	_____	_____%	_____	_____	_____
n. Total	_____	_____%	_____	_____	_____

APPENDIX G DETAILED DESCRIPTION OF EACH INSTRUCTIONAL SPACE

a. Name of space _____
b. No. of spaces _____

a. No. of staff stations _____
b. No. of teacher stations _____
c. No. of pupil stations _____
d. Area _____

Activities _____

_____

Relationships within plant _____

Relationships to outdoor areas _____

_____

Multi-purpose use _____

Public or non-school use _____

EQUIPMENT
a. Chalkboard _____ ft.
b. Map rail _____ ft.
c. Tackboard _____ ft.
d. Work counter _____ ft.
e. Drink fountain _____
f. Lavatories _____
g. Wardrobes _____
h. Storage _____
i. Displays _____
j. Other _____

NATURAL ILLUMINATION
a. Windows _____
b. Control _____
c. Skylight _____
d. Control _____

ARTIFICIAL ILLUMINATION
a. Type _____
b. Quantity _____
c. Special _____
d. Other _____

COMMUNICATIONS
a. Telephone _____
b. Bell _____
c. Buzzer _____
d. Speaker _____
e. Clock _____
f. Other _____

OTHER ELECTRICAL
a. Outlets _____

FINISHES
a. Standard _____
b. Floors _____
c. Base _____
d. Wainscot _____
e. Wall _____
f. Ceiling _____
g. Other _____

SERVICES
a. Water _____
b. Gas _____
c. Air _____
d. Other _____

MECHANICAL
a. Heating _____
b. Ventilating _____
c. Cooling _____
d. Other _____

Audiovisual aids _____

Health and safety considerations _____

Possible modifications _____

Other considerations _____

Reverse side for notes, comments, sketches, etc. _____

2

APPENDIX H GENERAL CONSTRUCTION DATA (ARCHITECTURAL)

FIRE RATING

Ordinary _____
Non-combustible _____
Heavy timber _____
Semi-fireproof _____
Fireproof _____
Wood frame _____
Unprotected metal _____
Other _____

CONSTRUCTION SYSTEMS

Floor system

Exterior walls

Interior walls

Roof system

Roofing

Roof drainage

OPENINGS

Windows

Window hardware

Skylights

Skylight control

Glass

Exterior doors

Exterior door frames

Exterior door hardware

Interior doors

Interior door frames

Interior door hardware

FINISHES (GENERAL)

Floors

Base

Wainscot

Walls

Ceilings

SPECIALTIES

Chalkboard

Chalkboard frames

Tackboard

Tackboard frames

Cabinets

Millwork

Other

EQUIPMENT

Lockers

Library equipment

Science equipment

Homemaking equipment

Folding stage

Folding bleachers

Other

GENERAL CONSTRUCTION DATA

(MECHANICAL)

HEATING

Heating system

Fuel

Heating distribution system

Pipe installation

Fuel service

Boiler

Boiler controls

Stoker

Stoker controls

Future expansion

Other

AIR CONDITIONING

Type of system

Type of equipment

Entire building

Partial

Immediate installation

Future installation

Other

VENTILATING

Mechanical

Controls

Gravity

Part of heating system

Controls

Other

PLUMBING

Disposal system

Sewer piping

Water piping

Hot water system

Hot water heating system

Water closets

Urinals

Lavatories

Interior drinking fountains

Exterior drinking foundtains

Water coolers

Service sinks

Receptors

Hydrants

Toilet accessories

Showers

Other

GENERAL CONSTRUCTION DATA (ELECTRICAL)

ELECTRICAL & COMMUNICATION SYSTEMS

Electrical service room

Transformer station

Voltage

Type of conduit

Light panel & sub-transformer location

Maximum motor size

Motor phase

Switches

Interior light fixtures

Exterior light fixtures

Bell system

Clock system

Intercommunication system

Television system

Future expansion

Other